



NATIONAL PARK SERVICE ENVIROFACTS

3/3/99

National Park Service
Hazardous Waste Management &
Pollution Prevention Team
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FIRING RANGE WASTE MANAGEMENT

FIRING RANGE WASTES

Wastes generated from the discharge of fire arms at indoor and outdoor ranges including spent bullets and shot, cartridges, dust, soil, surface water runoff, or other contaminated environmental media, and waste gun cleaning materials.

APPLICABLE STANDARDS

Federal: Firing range wastes are regulated under the Resource Conservation and Recovery Act (RCRA) and 40 Code of Federal Regulations (CFR) 260 - 266. The assessment and cleanup of outdoor firing ranges is regulated under RCRA and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). 40 CFR 178 provides a proposed rule for closed and transferred military ranges. This rule can provide guidance for closed and transferred NPS firing ranges.

State: State rules for management of firing range wastes may be more stringent than Federal requirements. The regulations for your state must be reviewed to assess your park's compliance status and requirements.

Other: Additional Federal and state standards may apply to the environmental, health, and safety management of firing ranges at your park. Parks should rely upon the procedures outlined in the NPS Hazardous Waste Management Handbook, as well as applicable NPS safety guidance and requirements.

WASTE CHARACTERIZATION

Firing range wastes may be listed hazardous wastes or characteristically hazardous based on a toxic characteristic leaching procedure (TCLP) test.

- Fired shot and bullets - characteristically hazardous due to lead toxicity.
- Contaminated media (soil, surface water runoff, and indoor range dust) - potentially characteristic hazard due to lead and arsenic toxicity.
- Waste gun cleaning materials (solvents, oils, rags) - potentially hazardous due to ignitability characteristic and/or lead/arsenic toxicity; gun oil may be classified as used oil under 40 CFR 279.

Discharged ammunition is not a RCRA solid waste while it remains uncollected in the range. Once collected for disposal, or upon range closure, these materials become solid waste and are subject to RCRA. Metal ammunition waste components reclaimed or recycled by a scrap metal vendor are exempt from RCRA C hazardous waste handling and disposal requirements.

HANDLING/STORAGE

Handling this waste material may require special precautions such as personal protective equipment (PPE) and special procedures to prevent injury. Always remember to consult with your park or regional Safety Officer for additional information concerning proper handling.

Waste Collection: Spent projectiles should be periodically collected from traps and recovered (e.g., sifted) from outdoor range impact areas. The frequency of collection is dependent upon the level of range activity. Floors of indoor ranges should be vacuumed regularly to collect any firearm discharge related dust that may accumulate. An industrial vacuum equipped with a HEPA filter should be used.

Workers conducting lead collection activities must be properly trained in lead abatement hazards and procedures, use proper personal protective equipment, and conduct air monitoring in accordance with OSHA requirements.

Container Management: Firing range wastes should be segregated to facilitate reclamation or recycling. Containers used to accumulate spent projectiles and cartridges to be recycled or reclaimed should have covers and be labeled to identify contents and intended disposition (i.e. Spent Bullets to be Reclaimed). Dust vacuumed from indoor ranges and spent HEPA filters are hazardous wastes and must be handled and stored in accordance with RCRA regulations. Used gun cleaning solvents, oily and dirty rags should must also be properly handled and stored (see Waste Solvent, Used Oil and Sorbents and Wipes EnviroFacts)

RECYCLING/DISPOSAL

- Spent projectiles should be classified as scrap metal and reclaimed (**otherwise they are be subject to classification and disposal as a hazardous waste**).
- Metal cartridges should be recycled via the supplier or manufacturer.
- Spent gun cleaning solvent and gun oil should be reclaimed or recycled.
- Used rags should be sent to an industrial laundry to be cleaned.
- Lead dust and HEPA filters must be disposed as a hazardous waste at a RCRA permitted facility.

Hazardous wastes from firing ranges must be properly manifested and shipped to a permitted hazardous waste disposal facility. Manifesting of wastes to be reclaimed or recycled is also

recommended to track proper transport and disposal.

SPECIAL TOPICS

Operation/Maintenance and Monitoring: It is recommended that parks operate firing ranges in conformance with safe management practices designed to prevent the release of lead into the environment. This means:

- Maintenance of an impact berm to minimize erosion, bullet ricochet, and accidental ingestion of projectiles by wildlife.
- Conducting surface water monitoring programs to evaluate potential off-site contamination and prevention or mitigation measures.
- Provision of hand washing and clothing change facilities to help reduce potential lead exposure and environmental contamination by firing range users.
- At indoor ranges, operation of a firing range ventilation system with air pollution control equipment to maintain indoor air quality and emissions.

Recordkeeping: The park is responsible for maintaining all files associated with the characterization transport and disposal of firing range wastes. Up-to-date operation and maintenance plans and health and safety plans and maintenance records should also be maintained.

Closure, Site Assessment, and Remediation: A CERCLA based closure process should be implemented when a firing range is deactivated.

POLLUTION PREVENTION

- Utilize non-NPS shooting ranges where possible.
- Minimize unauthorized and unnecessary use of NPS ranges.
- Use "green" ammunition (e.g., Delta Ammunition by Winchester) and "green" gun cleaning supplies and methods (e.g., biocleaning solutions).

ENVIROFACT X-REFERENCES

- Hazardous Waste Characterization
- Hazardous Waste Generator Status Determination
- Used Oil Management
- Spent Solvent Management
- Sorbents and Wipes Management

FIRING RANGE WASTE MANAGEMENT CHECKLIST

Checklist Item	Notes
1. Determine if “green” ammunition and gun cleaning supplies are utilized at the range. Contact Bill Colsen at the Federal Law Enforcement Training Center for further information [(912) 267-2233] or ask your ammunition supplier.	
2. Determine whether the park addresses firing range waste management and other procedures to minimize the potential for environmental impact.	
3. Confirm that there is a program for the collection of discharged projectiles and other firing range wastes including the collection of projectiles from impact berms and bullet traps and the collection of dust from indoor ranges using HEPA vacuums.	
4. Verify that firing range wastes are properly segregated and accumulated in closed, properly labeled containers.	
5. Confirm that proper waste disposal practices are conducted including the recycling or reclamation of spent projectiles and metal casings, cleaning solvents and oil and disposal of hazardous firing range wastes (e.g., lead contaminated dust and vacuum HEPA filters) in accordance with RCRA requirements at an authorized facility.	
6. Confirm that an adequate ventilation system with air pollution control equipment is provided for indoor ranges.	
7. Verify that personnel conducting maintenance activities are properly trained in lead abatement procedures, that they wear appropriate personal protective equipment, and that air monitoring is conducted during maintenance activities in accordance with OSHA requirements.	
8. Verify that contamination-monitoring programs have been conducted to determine the surface water, groundwater, and/or soil contamination and that procedures are in place to control or mitigate such contamination.	
9. Determine if there is a health and safety plan for the range and facilities (e.g., hand washing and clothes changing) to minimize exposure by users.	
10. Confirm that a formal closure procedure has been initiated and completed for deactivated ranges in accordance with CERCLA guidelines.	
11. Confirm that records of collection, storage and disposal, maintenance procedures, environmental monitoring, range closure and other documents related to range operations are properly maintained.	